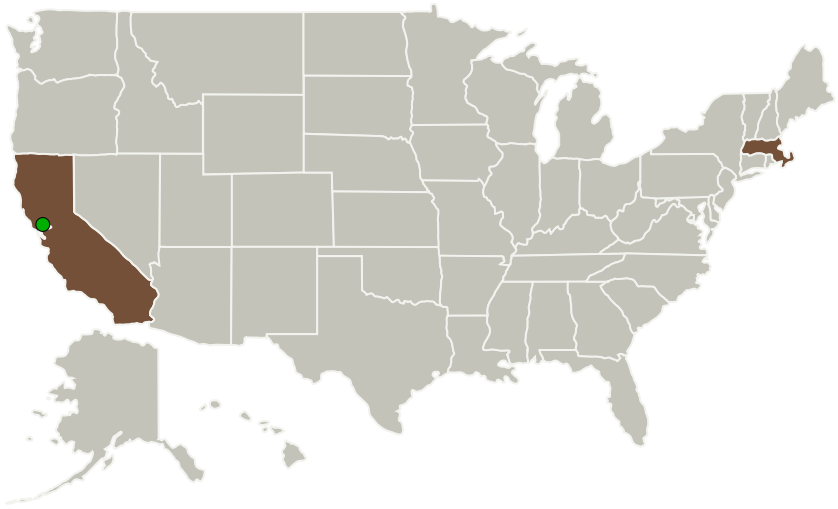
Smart Phone Fluorescent Chem8, Phase I

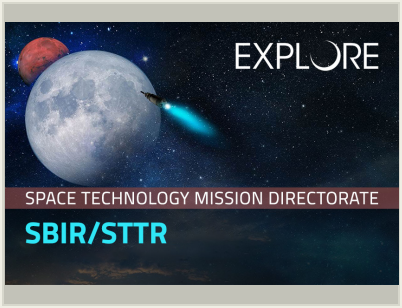
Completed Technology Project (2012 - 2012)

Project Introduction

Ionu Biosystems will develop a fluorescent smart phone blood analyzer that can measure important physiological concentrations from a drop of blood. The approach will be to develop fluorescent optode sensors to detect the concentration of the components of basic metabolic and blood gas panels. Using wireless optode sensors, which can reduced in size to the nanoscale, and fluorescence signal detection removes the need for wired connection of the sensors, sample preprocessing and microfluidics for sample handling. These advantages will reduce the size, weight and cost of the sample cartridge. Fluorescence emission from the sensors will be directly measured by the built-in phone camera and data processing can occur on the phone itself. The results from Phase I will include the construction of a prototype phone case to provide the necessary optical components to convert a smart phone into fluorescence sensor and response of sensors for the components of a chem8 to different target concentrations measured with the phone prototype. Phase I of this project will satisfy the solicitation requirements.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
ionu biosystems	Lead Organization	Industry	Somerville, Massachusetts
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Massachusetts

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138513)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

ionu biosystems

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

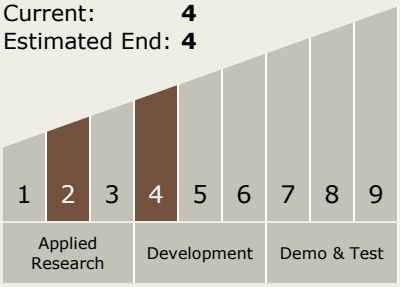
Carlos Torrez

Principal Investigator:

John Dubach

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.3 Human Health and Performance
    - TX06.3.1 Medical Diagnosis and Prognosis

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System